

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

THE BOC GROUP PLC  
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 Windlesham, Surrey GU20 6HJ  
 UNITED KINGDOM

Intellectual Property  
 RECEIVED

For

INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

|  |   |
|--|---|
| Applicant's or agent's file reference<br><b>M04B107PCT/ASB</b> | Date of mailing<br>(day/month/year) <b>11/05/2005</b>           |
| International application No.<br><b>PCT/GB2005/000354</b>      | International filing date<br>(day/month/year) <b>02/02/2005</b> |
| Applicant<br><b>THE BOC GROUP PLC</b>                          |   |

**1. This International Searching Authority:**

- (i) considers that there are 2 (number of) inventions claimed in the international application covered by the claims indicated ~~known~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~known~~ on the extra sheet:

- (ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:
- see annex

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid


**2. The applicant is hereby invited, within the time limit indicated above, to pay the amount indicated below:**

EUR 1 550,00 x 1 = EUR 1 550,00  
 Fee per additional invention      number of additional inventions:      total amount of additional fees

Or, \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. \_\_\_\_\_ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

|   |   |
|---|---|
| Name and mailing address of the International Searching Authority<br> European Patent Office, P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk<br>Tel. (+31-70) 340-2040; Tx: 31-651.epo-nl<br>Fax: (+31-70) 340-3016 | Authorized officer:<br><b>Ulrike Zänglein</b> |
|---|---|

Form PCT/ISA/206 (July 1992)

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This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-17, 19-31

A vibration damper for inhibiting transfer of vibrations to an apparatus during the evacuation thereof by a pump, the damper comprising a bellows arrangement, wherein the damper is axially pre-compressed.

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2. claim: 18

A vibration damper for inhibiting transfer of vibrations to an apparatus during the evacuation thereof by a pump, the damper comprising a bellows arrangement, wherein the damper comprises resistive means arranged about an axis and under tension in such a way that when damper is subjected to an external axial force tending to compress the bellows arrangement, the resistive means is subjected to a tensile force.

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This Authority considers that there are 2 inventions covered by the claims indicated as follows:

I: Claims 1-17, 19-31 directed to a pre-compressed damper and to a pump comprising such a damper;

II: Claim 18 directed to a damper comprising resistive means subjected to a tensile force.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The prior art has been identified as document WO 01/51817 A1 and discloses (see fig. 1):

a vibration damper for inhibiting transfer of vibrations to an apparatus during the evacuation thereof by a pump 1, the damper comprising a bellows arrangement 8 for isolating from the ambient atmosphere, fluid drawn from the apparatus by the pump 1, and means 9 for limiting axial compression of the bellows arrangement 8 during use of the damper.

It follows that the following technical feature of claim 1 makes a contribution over the prior art and can be considered as a special technical feature within the meaning of Rule 13.2 PCT:

a pre-compression of the damper.

The problem solved by this special technical feature can therefore be construed as:

how to improve vibration transmission properties of the damper.

On the other hand, a special technical feature of claim 18 is:

resistive means arranged about an axis and under tension in such a way that when damper is subjected to an external axial force tending to compress the bellows arrangement, the resistive means is subjected to a tensile force, the resistance to extension of the resistive means opposing axial compression of the bellows arrangement.

The problem solved by this special technical feature can therefore be construed as:

to provide alternative solution for means for limiting axial compression of the bellows arrangement.

Neither the special technical feature of the claim 1 nor any other corresponding feature is present in the claim 18. Also, examining the possible correspondence by technical effect, one finds that the technical effect of the first invention is a higher stiffness characteristic at lower displacement and that the technical effect of the second invention is avoiding of a buckling failure mode.

This appears to show lack of corresponding technical effect as well. Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

In conclusion, the groups of claims are not linked by common or corresponding special technical features and define 2 different inventions not linked by a single general inventive concept. The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

**Annex to Form PCT/ISA/206  
COMMUNICATION RELATING TO THE RESULTS  
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No  
**PCT/GB2005/000354**

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | US 3 000 389 A (ALSAGER LESLIE E ET AL)<br>19 September 1961 (1961-09-19)<br>the whole document  | 1-11, 13,<br>14, 31   |
| X          | PATENT ABSTRACTS OF JAPAN<br>vol. 1998, no. 14<br>31 December 1998 (1998-12-31)<br>& JP 10 252963 A (TOOFURE KK)<br>22 September 1998 (1998-09-22)<br>abstract | 1, 6-10,<br>14, 15    |
| A          | WO 01/51817 A (LEYBOLD VAKUUM GMBH;<br>ADAMIETZ, RALF; BEYER, CHRISTIAN;<br>ENGLAENDER, HEI) 19 July 2001 (2001-07-19)<br>the whole document                   | 1-17,<br>19-31        |
| X          | US 5 971 439 A (CWIK ET AL)<br>26 October 1999 (1999-10-26)<br>column 7, line 16 - column 10, line 56;<br>figure 1   | 1                     |
| X          | GB 1 541 294 A (EROMUE-ES HALOZATTERVEZO<br>VALLALAT) 28 February 1979 (1979-02-28)<br>the whole document  | 1                     |
| A          | DE 79 33 066 U1 (INDUSTRIE-WERKE KARLSRUHE<br>AUGSBURG AG, 7500 KARLSRUHE)<br>21 February 1980 (1980-02-21)<br>the whole document                              | 1                     |

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☒ Further documents are listed in the continuation of box C

☒ Patent family members are listed in annex

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document relating to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*S\* document member of the same patent family

**Annex to Form PCT/ISA/206  
COMMUNICATION RELATING TO THE RESULTS  
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No  
**PCT/GB2005/000354**

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |   |                       |
|--|---|-----------------------|
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
| A  | US 6 065 780 A (HIROSHIMA ET AL)<br>23 May 2000 (2000-05-23)<br>figures   | 1                     |
| A  | EP 1 270 949 A (BOC EDWARDS TECHNOLOGIES,<br>LIMITED) 2 January 2003 (2003-01-02)<br>figure 2   | 1                     |
| A  | WO 02/086325 A (LEYBOLD VAKUUM GMBH;<br>BEYER, CHRISTIAN; HODAPP, JOSEF;<br>ENGLAENDER, HEIN)<br>31 October 2002 (2002-10-31)<br>abstract   | 1                     |
| A  | PATENT ABSTRACTS OF JAPAN<br>vol. 2003, no. 02,<br>5 February 2003 (2003-02-05)<br>& JP 2002 303294 A (BOC EDWARDS<br>TECHNOLOGIES LTD)<br>18 October 2002 (2002-10-18)<br>abstract | 1                     |
| A  | PATENT ABSTRACTS OF JAPAN<br>vol. 005, no. 127 (M-083),<br>15 August 1981 (1981-08-15)<br>& JP 56 064195 A (JEOL LTD),<br>1 June 1981 (1981-06-01)<br>abstract                      | 1                     |